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ABSTRACT

Under the impetus of a mandate by the Arkansas legislature to utilize survey data in program planning, a microcomputer system was developed to facilitate the convenient collection and analysis of questionnaire responses. The Questionnaire Generator/Analyzer is divided into four sections to: (1) provide a bank of questionnaire items in ten topic areas; (2) generate master copies of questionnaires for four reference groups; (3) provide an efficient means for data entry; and (4) analyze response data for separate and combined response groups. Master copies of questionnaires are generated in an established format by first selecting scaled items from the questionnaire item bank. The data entry option in the Questionnaire Generator/Analyzer provides efficient recording of item response data entered by the previously identified groups and sub-groups. Data analysis of questionnaire responses are done by questionnaires and by item for separate and combined groups. A flag is selected upon which the analysis of the scaled questionnaire item is conducted. This flag is the percentage of responses which disagree with the particular questionnaire item. Flagged items can be reviewed with a number of options to consider, such as changing the program, changing the personnel, emphasizing the topic in program planning, changing the questionnaire, or no change. The efficiency and the speed of the system is illustrated in the case of four questionnaires for two school districts. (JAZ)

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A MICROCOMPUTER SYSTEM TO:
(1) GENERATE QUESTIONNAIRES FROM AN ITEM BANK
AND (2) ANALYZE RESPONSE DATA

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A MICROCOMPUTER SYSTEM TO: (1) GENERATE QUESTIONNAIRES
FROM AN ITEM BANK, AND (2) ANALYZE RESPONSE DATA

Under the impetus of a mandate by the Arkansas legislature to utilize survey data in program planning, a microcomputer system was developed to facilitate the convenient collection and analysis of questionnaire responses. The Questionnaire Generator/Analyzer is divided into four sections to: (1) provide a bank of questionnaire items in various topic areas; (2) generate master copies of questionnaires for four reference groups; (3) provide an efficient means for data entry; and (4) analyze response data for separate and combined response groups.

The Main Menu

```
*****
*
* QUESTIONNAIRE GENERATOR/ANALYZER *
*
* Questionnaire Item Bank . . . A *
* Questionnaire Generator . . . B *
* Questionnaire Data Entry . . . C *
* Questionnaire Data Analysis . D *
*
* Which option do you want? *
*
*****
```

The Questionnaire Item Bank

There are ten categories under which scaled questionnaire items may be banked. These items are scaled: SA=Strongly Agree; A=Agree; D=Disagree; SD=Strongly Disagree.

```
*****
*
*               QUESTION CATEGORIES
*
* Curriculum . . . . . 1
* Extra-curricular Activities . . 2
* Student Achievement/Behavior . 3
* Teachers/Staff . . . . . 4
* Management/Administration . . . 5
* Facilities . . . . . 6
* Academic Support Services . . . 7
* Auxiliary Services . . . . . 8
* School-Community Relations . . 9
* Miscellaneous . . . . . 10
*
* Which category do you want?
*
*****
```

An ample number of items (approximately 200) can be banked in each category. Currently, a number of items are available in each category; furthermore, items can be added as needed.

The Questionnaire Generator

Master copies of questionnaires are generated by first selecting scaled items from the questionnaire item bank. These items may be placed in the questionnaire in any desired order. A maximum of 60 scaled items can be used in any one questionnaire.

After the scaled items have been selected, up to six open-ended items may be added. Three open-ended items are available through the system. These three include an item from the Gallup Poll where the respondent is asked to grade the effectiveness of the local school, and items to identify the perceived strengths and weaknesses of the school.

A total of four different questionnaires can be generated for each of four different response groups. These reference groups can furthermore be subdivided into desired sub-categories for subsequent separate and combined analyses.

```
* * * * *
*                                     *
*      QUESTIONNAIRE GENERATOR      *
*                                     *
* District Parent Questionnaire . . 1 *
* District Patron Questionnaire . . 2 *
* District Staff Questionnaire . . . 3 *
* District Student Questionnaire . . 4 *
*                                     *
* * * * *
```

Each questionnaire is constructed in an established format. The questionnaires are titled and directions are given for recording responses. A convenient format is provided for both the scaled and open-ended questionnaire items. When sent to the printer, a master copy of the questionnaire is generated to be copied for distribution to the appropriate reference group.

The Data Entry Procedure

The data entry option in the Questionnaire Generator/Analyzer provides efficient recording of item response data entered by the previously identified groups and sub-groups. As completed questionnaires are received, the responses can be entered at the keyboard. Either the numeric pad or numbers at the top of the keyboard can be used for data entry.

All scaled item responses are recorded on the screen. Any editing of the responses can be efficiently done through screen editing. Data can be entered quickly and mistakes can be easily corrected.

Answers to open-ended items are recorded by response categories. These open-ended items may have multiple responses by a respondent for any single item. Subsequent analyses of open-ended items are given in both tallies and percentages of those responding.

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The Data Analysis

Data analyses of questionnaire responses are done by questionnaire and by item for separate and combined groups. For example, consider a school district having five elementary schools. Questionnaire analysis could be performed on the responses by the parents of students at one elementary school. The responses of the parents at the other four elementary schools might be combined for contrast. Also, the parents' responses for all schools in the district could be combined for a total analysis of parental response to the District Parent Questionnaire.

A flag is selected upon which the analysis of the scaled questionnaire items is conducted. This flag is the percentage of responses which disagree (by responding D=Disagree or SD=Strongly Disagree) with the particular questionnaire item. Once flagged, the topic which this item addresses would become subject for review. Suppose a flag of 30 percent was chosen. Then any item would be up for review for which 30 percent or more of the respondents disagreed with the statement being presented.

Flagged items could be reviewed with a number of options to consider. Some options might include: changing the program; changing the personnel; emphasizing the topic in program planning; changing the questionnaire item; or no change, due to the questionable ability of the particular group of respondents to respond to the item.

Example Outcomes from Several Districts

The efficiency with which the response data can be entered into the Questionnaire Generator/Analyzer can easily be illustrated. Responses to 3998 questionnaires were entered in a two-week period by one administrative office while it maintained normal business functions. Subsequent separate and combined group analyses were performed in a single day for distribution to the appropriate advisory committees and administrators.

Consider the following table which indicates the percent of the items flagged on each of four questionnaires for two school districts (A and B). The numbers in parentheses after A and B indicate the number of items on the respective questionnaires. District A used a flag of 25 percent; District B used 30 percent.

Flag	-----Questionnaire-----							
	---Parent---		---Patron---		---Staff---		---Student---	
(%)	A(44)	B(50)	A(28)	B(38)	A(50)	B(59)	A(41)	B(37)
20%	41	70	11	79	32	53	62	89
25%	(18)	62	(11)	68	(14)	37	(46)	78
30%	5	(36)	11	(53)	2	(27)	27	(62)
35%	2	16	7	34	1	17	20	57
40%	0	12	7	16	1	15	12	49
45%	0	4	7	8	1	14	5	30
50%	0	4	4	3	1	8	2	27
Number	1707	129	209	135	339	56	1743	177
GPA	3.01	2.58	3.14	2.58	3.51	2.90	2.84	2.27

For illustration, the 25 percent flag used by District A resulted in 18 percent of the items being flagged on the parent questionnaire. For District B, 36 percent of the items on the parent questionnaire were flagged at the 30 percent flag. Had District B used 25 percent as a flag, 62 percent of the items would have been flagged on this questionnaire. Obviously, students rated items lower than other response groups in both Districts A and B.

The overall grading of the school was determined for each group from the responses to the open-ended item from the Gallup Poll. Overall, respondents in District A rated their school higher than did respondents in District B. Even with the selection of a more conservative flag, District B had many more facets of its program to review, based on the questionnaire results, than did District A.

It can be noted from the previous table that agreement and disagreement with particular district facets are directly related to the grade ratings given the school. A districts perception of its rating by these response groups will affect the selection of the percentage to be used as the flag. With the initial experience of selecting a flag and using that percentage to conduct the analysis, a district will be able to: set more realistic expectations in future surveys; identify specific program facets to include in program planning; and monitor improvement in meeting program goals.